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PHIT2LEARN
Physical activity Interventions to enhance LEArning in vocational education and training

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Purpose
The rationale behind PHIT2LEARN stems from a rather similar study, investigating the relation between physical activity (PA) and learning performance in primary school children, the SMART MOVES! project.1 PHIT2LEARN continues on this track and aims to investigate the causal relation between objectively measured PA and sedentary behavior (SB) interventions on the one hand, and a variety of learning performance measures at the other hand, in vocational education and training (VET) students.

Background, rationale & goals

- PA and SB seem to have respectively beneficial and detrimental effects on school performance.2,5
- A causal relationship between PA and SB on the one hand, and school performance on the other hand, is lacking in VET students.
- Major part of students’ inactivity is within the school setting.

- VET students have low activity levels in general.6
- VET students’ (±16-20 years) prefrontal cortex is developing.7,8
- VET students have a relatively low level of education.
- Above three factors lead to the expectation that VET students are sensitive for and could benefit from PA/SB interventions.

- Objectively measured PA levels – SB, standing, LPA and MVPA.
- School performance – Dutch and mathematics.
- Cognitive performance by executive function (inhibition, shifting and updating) – Letter-Memory test9 ± Color-Shape test10
- Background variables – SES, health, pubertal status, food, alcohol, drugs, sleep, motivation, mood and general feelings.

- Scientific output by papers, presentations and dissertation.
- Societal output for students, parents and teachers by tailor-made PA/SB advice for VET students and teachers.
- Influencing policy making by a tribute to the national debate regarding curriculum development, contributing to the national goals in prevention focused policies.

Methods
In four closely interlinked studies, we investigate the causal effects of ‘sedentary behavior repression interventions’ on school performance and cognition in VET students. Studies 1, 2 and 3 are mainly intended to yield input for study 4. All studies will be set up and executed in close collaboration with our consortium partners.

Study 1 elucidates habitual, objectively measured PA patterns of VET students of 3 different study directions, and potential associations with executive function and school performance.

Study 2 is an RCT in the school setting to determine possible short-term causal effects of PA/SB interventions on cognitive performance. This study also focuses on the underlying mechanisms.

Study 3 is an RCT in the school setting to determine possible short-term causal effects of standing interventions on collaboration and creativity. This study also focuses on the underlying mechanisms.

Study 4 is a long-term ecological experiment in the VET setting, based on results from studies 1, 2 and 3, and literature.

References
1. www.smart-moves.nl
5. 2014, Knight, A.P., & Baer, M.
6. 2012, Miyake, A., & Friedman, N.
7. 2012, Caine, E.A., & Dark, R.E.

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